MODBUS- Protocol BR6000 Version 6.0 and higher (issue 02/2012)

Function code 3: read only registers

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
0	0000	*	*	Reactive power – H
1	01	*	*	Reactive power – L
2	02	*	*	Active power – H
3	03	*	*	Active power – L
4	04	*	*	Apparent power – H
5	05	*	*	Apparent power – L
6	06	*	*	Differential reactive power – H
7	07	*	*	Differential reactive power – L
8	08	*	*	Actual system output – H (kvar)
9	09	*	*	Actual system output – L (kvar)
10	0A	0	0 - 100%	Actual system output %
11	0B	*	*	Voltage * 10 (max. 300V)
12	0C	*	*	Current * 10 – H
13	0D	*	*	Current * 10 – L
14	0E	*	*	Voltage * 10 – H
15	0F	*	*	Voltage * 10 – L
16	10	0	Steps	Active stages (1. bit=1. stage)
19	13	*	*	Cos-Phi (INTEGER)
20	14	*	*	Voltage
21	15	*	*	Current
22	16	0	Frequency	Frequency
23	17	0	Temp. cabinet	Temperature (cabinet)
24	18	0	Temp. controller	Temperature (inside controller)
25	19	*	*	Energy – H
26	1A	*	*	Energy – L
27	1B	*	*	Energy (supply) – H
28	1C	*	*	Energy (supply) – L
30	1E	*	*	Active stages (1. bit=1. stage)
31	1F	*	*	3rd voltage harmonic
32	20	*	*	5th voltage harmonic
33	21	*	*	7th voltage harmonic
34	22	*	*	9th voltage harmonic
35	23	*	*	11th voltage harmonic
36	24	*	*	13th voltage harmonic
37	25	*	*	15th voltage harmonic
38	26	*	*	17th voltage harmonic
39	27	*	*	19th voltage harmonic
40	28	*	*	THD-V
41	29	*	*	3rd current harmonic
42	2A	*	*	5th current harmonic
43	2B	*	*	7th current harmonic
44	2C	*	*	9th current harmonic
45	2D	*	*	11th current harmonic
46	2E	*	*	13th current harmonic
47	2F	*	*	15th current harmonic
48	30	*	*	17th current harmonic
49	31	*	*	19th current harmonic
50	32	*	*	THD-I

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
51	33	*	*	COS-PHI
60	3C	0	Error-Register	BIT 0 = No measuring voltage BIT 1 = over voltage BIT 2 = over compensated BIT 3 = under compensated BIT 4 = exceed voltage harmonics BIT 5 = over temperature BIT 6 = over current BIT 7 = under voltage
61	3D	0	Warning-Register	BIT 0 = exceed switching cycle BIT 1 = low measuring current BIT 2 = MODBUS-Error BIT 3 = MMI-Error BIT 4 = REMOTE switch-on BIT 5 = REMOTE stop BIT 6 = REMOTE switch-off BIT 7 = REMOTE active
62	3E	0	Message-Reg.	BIT 0 = low system current BIT 1 = external BUS-ERROR BIT 2 = C-DEFECT BIT 4 = system current > NULL BIT 5 = system overload BIT 6 = external error BIT 7 = C-DEFECT-OFF
65	41	*	*	Reactive power (IND) – H
66	42	*	*	Reactive power (IND) – L
67	43	*	*	Reactive power (CAP) – H
68	44	*	*	Reactive power (CAP) – L
71	47	0	1/0	Status flag relay 1
72	48	0	1/0	Status flag relay 2
73	49	0	1/0	Status flag relay 3
74	4A	0	1/0	Status flag relay 4
75	4B	0	1/0	Status flag relay 5
76	4C	0	1/0	Status flag relay 6
77	4D	0	1/0	Status flag relay 7
78	4E	0	1/0	Status flag relay 8
79	4F	0	1/0	Status flag relay 9
80	50	0	1/0	Status flag relay 10
81	51	0	1/0	Status flag relay 11
82	52	0	1/0	Status flag relay 12
83	53	0	1/0	Status flag relay 13
85	55	BIT 8 = CAP BIT 9 = supply	Cos-Phi	Compressed data
86	56	*	*	Voltage
87	57	*	*	Current
88	58	*	*	BIT 0 = Alarm relay BIT 1 = Relay 1 ... BIT 12 = Relay 12 BIT 13 = Message relay BIT 14 = control direction BIT 0 BIT 15 = control direction BIT 1
89	59	Endstop	Control series	

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
91	5B	Target-Cos-phi 1	Target-Cos-phi 2	Program memory
92	5C	*	*	THD-V
93	5D	*	*	THD-I
94	5E	Error-Register	Temp. cabinet	
95	5F	Controller menu: 0 = AUTO 1 = Program 2 = Control Ser. EDITOR 3 = Manually 4 = Service 5 = Expert-Mode 6 = System 7 = Expert-Mode 2	alive counter	
96	60	Frequency	Device type: 1 = BR6000 R	From version V4.0
97	61	*	*	Energy – H
98	62	*	*	Energy – L → reset counter
99	63	*	*	Energy (supply) – H
100	64	*	*	Energy (supply)– L → reset counter
101	65	0	Language	0…9 (0= German, 1= English, ..)
102	66	0	Current transformer prim.	0…255 (0 = 5A) (see controller menu)
103	67	0	Current transformer sec.	0 = 1A / 1 = 5A
104	68	0	Endstop	1…13
105	69	0	Control series	1..21 (see controller menu)
106	6A	0	Control mode	0..3 (see controller menu)
107	6B	0	Power of 1. stage	Integer (0…255 kvar)
108	6C	0	Power of 1. stage	Decimal (0…99)
109	6D	0	Target-Cos-phi	10 = 0.10 CAP 100 = 1.00 190 = 0.10 IND
110	6E	0	Measuring volt.	(see controller menu)
111	6F	0	Volt.-Converter	(see controller menu)
112	70	0	Switch-on time	1…120 s / 121…138 = 3…20min
113	71	0	Switch-off time	1…120 s / 121…138 = 3…20min
114	72	0	Discharge time	1…120 s / 121…138 = 3…20min
115	73	0	Alarm temp.	40…85°C
116	74	0	Message relay	4…11 (see controller menu)
117	75	0	Fan start up temperature	15…70°C
118	76	0	External input	17…20 (see controller menu)
				START 2nd PARAMETER SET
119	77	0	(2) Current transformer prim.	0…255 (0 = 5A) (see controller menu)
120	78	0	(2) Current transformer sec.	0 = 1A / 1 = 5A
121	79	0	(2) Endstop	1…13
122	7A	0	(2) Control series	1..21 (see controller menu)
123	7B	0	(2) Control mode	0..3 (see controller menu)
124	7C	0	(2) Power1.Stage	Integer (0…255 kvar)
125	7D	0	(2) Power1.Stage	Decimal (0…99)
126	7E	0	(2)Target-Cosphi	(see address 109)
127	7F	0	0	Res.

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
128	80	0	0	Res.
129	81	0	(2)Switch-on time	1…120 s / 121…138 = 3…20min
130	82	0	(2)Switch-off time	1…120 s / 121…138 = 3…20min
131	83	0	(2)Dischargetime	1…120 s / 121…138 = 3…20min
				END OF 2nd PARAMETER SET
132	84	0	Threshold THD-V	100 = 10%
141	8D	0	stage quantification	1st stage
...				
153	99	0	stage quantification	13th stage
154	9A	0	Stage status	1st stage 1 = OFF 2 = AUTO 3 = Fix
...				
166	A6	0	Stage status	13th stage
170	AA	0	Control direction	1 = switch-on 2 = stop 3 = switch-off
181	B5	*	*	Discharge state of 1st stage → remain discharge time
...				
193	C1	*	*	Discharge state of 13th stage → remain discharge time
255	FF	64	51	Software version: 51 = V5.1 64 = BR6400

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
				MASTER-SLAVE-MODE
3824	0EF0	*	*	System power - H
3825	0EF1	*	*	System power - L
3826	0EF2	*	*	Stages (BIT 1 = 1st stage ..)
3827	0EF3	*	*	Differential reactive power - H
3828	0EF4	*	*	Differential reactive power - L
3829	0EF5	STATUS	ENDSTOP	Status: BIT13 = under current BIT14 = 1 (BR6000) BIT15 = external input
	0EF6			REMOTE MEASURING
3830	0EF7	*	*	Reactive power - H
3831	0EF8	*	*	Reactive power - L
3832	0EF9	*	*	Active power - H
3833	0EFA	*	*	Active power - L
3834	0EFB	*	*	Apparent power -H
3835	0EFC	*	*	Apparent power - L

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
5995	176E	Max. voltage (H-Byte)	Spannung (H-Byte)	Version 6.0 following
5999	176F	64=6400	1=BR6000 R	device version: 51 = V5.1

Address DEZ	**Address HEX**	**HIGH-BYTE**	**LOW-BYTE**	
6000	1770	*	*	Reactive power - H
6001	1771	*	*	Reactive power - L
6002	1772	*	*	Active power - H
6003	1773	*	*	Active power - L
6004	1774	*	*	Apparent power - H
6005	1775	*	*	Apparent power - L
6006	1776	*	*	Differential reactive power - H
6007	1777	*	*	Differential reactive power - L
6008	1778	Frequency	Cos-phi	Cos-phi 0…100…200
6009	1779	*	*	Voltage (LONG – 16bit)
6010	177A	*	*	Current
6011	177B	*	*	BIT 0 = Message relay BIT 1…12 = Stages 1..12 BIT 13 = Alarm relay BIT 14/15 = control direction
6012	177C	Temp. cabinet	Max. temp. cabinet	Temperature
6013	177D	*	*	THD-V
6014	177E	*	*	THD-I
6015	177F	*	*	Max. reactive power - H
6016	1780	*	*	Max. reactive power - L
6017	1781	*	*	Max. active power - H
6018	1782	*	*	Max. active power - L
6019	1783	*	*	Max. apparent power - H
6020	1784	*	*	Max. apparent power - L
6021	1785	*	*	Max. voltage
6022	1786	Error-Mask	Errors	BIT0 = No measuring voltage BIT1 = over voltage BIT2 = over compensated BIT3 = under compensated BIT4 = Harmonics BIT5 = over temperature BIT6 = over current BIT7 = under voltage ---------- MASK: 0 = hide-error / 1 = active ---------- BIT8 = No measuring voltage BIT9 = over voltage BIT10 = over compensated BIT11 = under compensated BIT12 = Harmonics BIT13 = over temperature BIT14 = over current BIT15 = under voltage

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
6023	1787	Warning	Messages	BIT 0 = low system current BIT 1 = External-BUS-ERROR BIT 2 = C-DEFECT BIT 3 = system current > NULL BIT 4 = system over load BIT 5 = external error BIT 6 = C-DEFECT-OFF BIT 7 = AUTO-INIT-ERROR ---------- BIT 8 = exceed switching cycle BIT 9 = low measuring current BIT 10 = MODBUS-Error BIT 11 = MMI-Error BIT 12 = REMOTE switch-OFF BIT 13 = REMOTE stop BIT 14 = REMOTE switch-ON BIT 15 = REMOTE active
6024	1788	Mask Warning	Mask Messages	MASK: 0 = hide-error / 1 = active ---------- BIT 0 = low system current BIT 1 = External-BUS-ERROR BIT 2 = C-DEFECT BIT 3 = system current > NULL BIT 4 = system over load BIT 5 = external error BIT 6 = C-DEFECT-OFF BIT 7 = AUTO-INIT-ERROR ---------- BIT 8 = exceed switching cycle BIT 9 = low measuring current BIT 10 = MODBUS-Error BIT 11 = MMI-Error BIT 12 = REMOTE switch-OFF BIT 13 = REMOTE stop BIT 14 = REMOTE switch-ON BIT 15 = REMOTE active
6025	1789	*	*	Switching cycles 1st stage - H
6026	178A	*	*	Switching cycles 1st stage - L
6027	178B	*	*	Switching cycles 2nd stage - H
6028	178C	*	*	Switching cycles 2nd stage - L
6029	178D	*	*	Switching cycles 3rd stage - H
6030	178E	*	*	Switching cycles 3rd stage - L
6031	178F	*	*	Switching cycles 4th stage - H
6032	1790	*	*	Switching cycles 4th stage - L
6033	1791	*	*	Switching cycles 5th stage - H
6034	1792	*	*	Switching cycles 5th stage - L
6035	1793	*	*	Switching cycles 6th stage - H
6036	1794	*	*	Switching cycles 6th stage - L
6037	1795	*	*	Switching cycles 7th stage - H
6038	1796	*	*	Switching cycles 7th stage - L
6039	1797	*	*	Switching cycles 8th stage - H
6040	1798	*	*	Switching cycles 8th stage - L
6041	1799	*	*	Switching cycles 9th stage - H
6042	179A	*	*	Switching cycles 9th stage - L
6043	179B	*	*	Switching cycles 10th stage - H
6044	179C	*	*	Switching cycles 10th stage - L
6045	179D	*	*	Switching cycles 11th stage - H
6046	179E	*	*	Switching cycles 11th stage - L
6047	179F	*	*	Switching cycles 12th stage - H

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
6048	17A0	*	*	Switching cycles 12th stage - L
6049	17A1	*	*	Switching cycles 13th stage - H
6050	17A2	*	*	Switching cycles 13th stage - L
6051	17A3	*	*	Operation time - C 1 H
6052	17A4	*	*	Operation time – C 1 L
6053	17A5	*	*	Operation time - C 2 H
6054	17A6	*	*	Operation time – C 2 L
6055	17A7	*	*	Operation time - C 3 H
6056	17A8	*	*	Operation time – C 3 L
6057	17A9	*	*	Operation time - C 4 H
6058	17AA	*	*	Operation time – C 4 L
6059	17AB	*	*	Operation time - C 5 H
6060	17AC	*	*	Operation time – C 5 L
6061	17AD	*	*	Operation time - C 6 H
6062	17AE	*	*	Operation time – C 6 L
6063	17AF	*	*	Operation time - C 7 H
6064	17B0	*	*	Operation time – C 7 L
6065	17B1	*	*	Operation time - C 8 H
6066	17B2	*	*	Operation time – C 8 L
6067	17B3	*	*	Operation time - C 9 H
6068	17B4	*	*	Operation time – C 9 L
6069	17B5	*	*	Operation time - C 10 H
6070	17B6	*	*	Operation time – C 10 L
6071	17B7	*	*	Operation time - C 11 H
6072	17B8	*	*	Operation time – C 11 L
6073	17B9	*	*	Operation time - C 12 H
6074	17BA	*	*	Operation time – C 12 L
6075	17BB	*	*	Operation time - C 13 H
6076	17BC	*	*	Operation time – C 13 L
6077	17BD	Bit 8…15	Bit 0…7	Stage status: stage 1…8 Bit 0/1 = Stage 1 (0…3) Bit 2/3 = Stage 2 Bit 4/5 = Stage 3 Bit 6/7 = Stage 4 Bit 8/9 = Stage 5 Bit 10/11 = Stage 6 Bit 12/13 = Stage 7 Bit 14/15 = Stage 8
6078	17BE	Bit 8…15	Bit 0…7	Stage status: stage 9…13 Bit 0/1 = Stage 9 (0…3) Bit 2/3 = Stage 10 Bit 4/5 = Stage 11 Bit 6/7 = Stage 12 Bit 8/9 = Stage 13 Bit 15 = 2.Parameter set (1= ON)
6079	17BF	*	*	Controller operation time - H
6080	17C0	*	*	Controller operation time - L
6081	17C1	C-Power (integer)	C-Power (decimal)	Stage power 1st stage Power > 255kvar → BIT7 = 1
6082	17C2	-	*	Stage weight C1
6083	17C3	-	*	Stage weight C2
6084	17C4	-	*	Stage weight C3
6085	17C5	-	*	Stage weight C4
6086	17C6	-	*	Stage weight C5
6087	17C7	-	*	Stage weight C6
6088	17C8	-	*	Stage weight C7
6089	17C9	-	*	Stage weight C8
6090	17CA	-	*	Stage weight C9

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
6091	17CB	-	*	Stage weight C10
6092	17CC	-	*	Stage weight C11
6093	17CD	-	*	Stage weight C12
6094	17CE	-	*	Stage weight C13
				EXPERT-MODE
6100	17D4	-	*	Integration time
6101	17D5	-	*	Max. switch power
6102	17D6	-	*	Trigger value
6103	17D7	-	*	Enable programming password
6104	17D8	-	*	Switching cycle warning
6105	17D9	-	*	Fast discharge 1 = YES
6106	17DA	-	*	Discharge time
6107	17DB	-	*	Phase – Current: L1/L2/L3
6108	17DC	-	*	Phase – Voltage: 30°…330°
6109	17DD	-	*	C-Test 0= No, 1= Yes
6110	17DE	-	*	C-Error
6111	17DF	-	*	Number of tests
6112	17E0	-	*	Power of 1st stage 255kvar / 2550kvar
6113	17E1	-	*	Controlled phases: 1 / 3phase
6114	17E2	-	*	Interface protocol
6115	17E3	-	*	Baud rate
6116	17E4	-	*	Address
6117	17E5	-	*	Number of MMI
6118	17E6	-	*	System current - H
6119	17E7	-	*	System current - L
6120	17E8	-	*	ASCII-Timing
6121	17E9	-	*	External device (0 = MMI6000) (1 = MMI7000)
6122	17EA	-	*	Voltage (0 = No / 1 = yes)
6123	17EB	-	*	Current (0 = No / 1 = yes)
6124	17EC	-	*	CosPhi (0 = No / 1 = yes)
6125	17ED	-	*	Reactive power (0 = No / 1 = yes)
6126	17EE	-	*	Active power (0 = No / 1 = yes)
6127	17EF	-	*	Apparent power (0 = No / 1 = yes)
6128	17F0	-	*	Stages (0 = No / 1 = yes)
6129	17F1	-	*	MIN/MAX-Values (0 = No/1 = yes)
6130	17F2	-	*	Separator (14…19)
6136	17F8	-	*	Error memory no. 1
6137	17F9	-	*	Error memory no. 2
6138	17FA	-	*	Error memory no. 3
6139	17FB	-	*	Error memory no. 4
6140	17FC	-	*	Error memory no. 5
6141	17FD	-	*	Error memory no. 6
6142	17FE	-	*	Error memory no. 7
6143	17FF	-	*	Error memory no. 8

Measuring values in floating point format (32Bit)

Function code 3 - only read register (from version 6.0 onwards)

Adress DEZ	Adress HEX	HIGH-BYTE	LOW-BYTE	
7000	1B58	*	*	Reactive power
		*	*	
7002	1B5A	*	*	Active power
		*	*	
7004	1B5C	*	*	Apparent power
		*	*	
7006	1B5E	*	*	Differenz Blindleistung
		*	*	
7008	1B60	*	*	Cos-phi
		*	*	
7010	1B62	*	*	Voltage
		*	*	
7012	1B64	*	*	Current
		*	*	
7014	1B66	*	*	Message relay….. BIT 0 Outputs …….BIT 1…12 Alarm relay ……BIT 13 Control direction ...BIT 14/15

Writable registers. PROGRAM – MODE - MEMORY

Function code 6: writable register

Address DEZ	Address HEX	HIGH-BYTE	LOW-BYTE	
				PROGRAM MEMORY
1	0001	0	Language	0…9 (0= German, 1= English, ..)
2	0002	0	Current transformer prim.	0…255 (0 = 5A) (see controller menu)
3	0003	0	Current transformer sec.	0 = 1A / 1 = 5A
4	0004	0	Endstop	1…13
5	0005	0	Control series	1..21 (see controller menu)
6	0006	0	Control mode	0..3 (see controller menu)
7	0007	0	Power of 1. stage	Integer (0…255 kvar)
8	0008	0	Power of 1. stage	Decimal (0…99) BIT 7 = 1: Range = 0…2550 kvar
9	0009	0	Target-Cos-phi	10 = 0.10 CAP 100 = 1.00 190 = 0.10 IND
10	000A	0	Measuring volt.	(see controller menu)
11	000B	0	Volt.-Converter	(see controller menu)
12	000C	0	Switch-on time	1…120 s / 121…138 = 3…20min
13	000D	0	Switch-off time	1…120 s / 121…138 = 3…20min
14	000E	0	Discharge time	1…120 s / 121…138 = 3…20min
15	000F	0	Alarm temp.	40…85°C
16	0010	0	Message relay	4…11 (see controller menu)
17	0011	0	Fan startup temp	15…70°C
18	0012	0	External input	17…20 (see controller menu)
				START 2nd PARAMETER SET
19	0013	0	(2) Current transformer prim.	0…255 (0 = 5A) (see controller menu)
20	0014	0	(2) Current transformer sec.	0 = 1A / 1 = 5A
21	0015	0	(2) Endstop	1…13
22	0016	0	(2) Control series	1..21 (see controller menu)
23	0017	0	(2) Control mode	0..3 (see controller menu)
24	0018	0	(2) Power1.Stage	Integer (0…255 kvar)
25	0019	0	(2) Power1.Stage	Decimal (0…99)
26	001A	0	(2)Target-Cosphi	(see address 109)
27	001B	0	0	Reserve
28	001C	0	0	Reserve
29	001D	0	(2)Switch-on time	1…120 s / 121…138 = 3…20min
30	001E	0	(2)Switch-off time	1…120 s / 121…138 = 3…20min
31	001F	0	(2)Dischargetime	1…120 s / 121…138 = 3…20min
				End 2nd PARAMETER SET
32	0020	0	Threshold THD-V	100 = 10%
				REMOTE-REGISTER
40	0028	Max stages	Control direction: 0 = paused 1 = switch-OFF 2 = stop 3 = switch-ON	Works only without key lock
				RESET-REGISTER
200	00C8	170	170	Reset of maximum registers

Specification of program memory

FUNCTION	REGISTER R/W	Specification
Language	1 / 101	0…9 0 = DEUTSCH 1 = ENGLISH 2 = ESPANOL 3 = NEDERLANDS 4 = RUSSISCH 5 = CZECH 6 = POLSKI 7 = FRENCH 8 = PORTUGUES 9 = TÜRKCE
Current transformer prim	1/102	1…255 1 = 5A - 50 = 250A (5A steps) 51 = 260A – 175 = 1500A (10A steps) 176 = 1550A – 185 = 2000A (50A steps) 186 = 2100A – 245 = 8000A (100A steps) 246 = 8500A – 255 = 13000A (500A steps)
Current transformer sec	3/103	0…1 0 = 1A 1 = 5A
Endstop	4/104	1…12 (13) used stages
Control series	5/105	1…21 1 = Series 1: 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 , 1 2 = Series 2: 1 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 3 = Series 3 1 , 2 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 4 = Series 4 1 , 2 , 3 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 5 = Series 5 1 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 6 = Series 6 1 , 2 , 3 , 6 , 6 , 6 , 6 , 6 , 6 , 6 , 6 , 6 7 = Series 7 1 , 2 , 4 , 8 , 8 , 8 , 8 , 8 , 8 , 8 , 8 , 8 8 = Series 8 1 , 1 , 1 , 1 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 9 = Series 9 1 , 1 , 1 , 1 , 1 , 6 , 6 , 6 , 6 , 6 , 6 , 6 10 = Series 10 1 , 1 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 11 = Series 11 1 , 1 , 2 , 2 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 12 = Series 12 1 , 1 , 2 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 13 = Series 13 1 , 1 , 1 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 , 2 14 = Series 14 1 , 1 , 2 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 15 = Series 15 1 , 1 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 16 = Series 16 1 , 1 , 2 , 4 , 8 , 8 , 8 , 8 , 8 , 8 , 8 , 8 17 = Series 17 1 , 2 , 2 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 , 3 18 = Series 18 1 , 2 , 3 , 4 , 4 , 8 , 8 , 8 , 8 , 8 , 8 , 8 19 = Series 19 1 , 2 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 20 = Series 20 1 , 2 , 2 , 2 , 4 , 4 , 4 , 4 , 4 , 4 , 4 , 4 21 = Series 21 = SERIES-EDITOR
Control mode	6/106	0…3 0 = sequent / LIFO 1 = loop / FIFO 2 = intelligent 3 = combi-detuning
Power of 1st step	7/107	Integer = 0…255 kvar / 0…2550 kvar
Power of 1st step	8/108	Decimal= 0…99
Target-cosPhi	9/109	10…190 10 = 1,00 CAP 100 = 1,00 190 = 0,10 IND

Measuring voltage	10/110	0…99 0 = 30V (5V steps) 99 = 525V
Voltage converter	11/111	0…255 0 = without converter 1 = 230V – 77 = 990V (10V steps) 78 = 1000V – 187 = 11000V (100V steps) 188 = 12kV – 255 = 79kV (1000V steps)
Switch-on time	12/112	1…138 1 = 1s – 120 = 120s 121 = 3min – 138 = 20min
Switch-off time	13/113	1…138 1 = 1s – 120 = 120s 121 = 3min – 138 = 20min
Discharge time	14/114	1…138 1 = 1s – 120 = 120s 121 = 3min – 138 = 20min
Alarm temperature	15/115	40….85 40°C – 85°C
Message relay	16/116	4…11 4 = off 5 = external 6 = fan 7 = energy supply 8 = under current 9 = harmonics 10 = remote controller 1 11 = remote controller 2
Fan start up temp.	17/117	15…70 15°C – 70°C
Function of external input	18/118	17…20 17 = not used 18 = 2nd parameter set 19 = external error 20 = coupling (MASTER)
	19…31	2nd PARAMETER SET equal functions to first parameter set
Threshold THD-V	32/132	5…255 5 = 0,5 % THD 255 = 25,5 % THD

REMOTE REGISTERS:

Function code 6:

FUNCTION	REGISTER	H-BYTE	L-BYTE
Remote-Register	40	Number of steps to switch 1…X (X = settings at EXPERT-MODE)	0 = remote not used 1 = switch-OFF 2 = stop 3 = switch-ON

SLAVE-MODE-REGISTER: (SLAVE-HYBRID, SLAVE-MODE-FUNCTION)

Function code 6:

FUNCTION	REGISTER	H-BYTE	L-BYTE
REACTIVE-POWER-HANDOVER-REGISTER Answer: SYSTEM POWER SLAVE	80	H-Teil Difference-reactive power in kvar H-part System power in kvar	L-Teil Difference reactive power in kvar L-part System power in kvar

MODBUS-TARGET-COS PHI-REGISTER: temp. (RAM) Target-cosphi

Function code 6:

Refresh-time : < 4 Minuten

FUNCTION	REGISTER	H-BYTE	L-BYTE
Target-cosphi * 100	120	H-part Target-cos phi	L-part Target-cos phi

Example: 100 = 1.00
90 = 0.90 IND
-90 = 0.90 CAP

RESET- REGISTER:

Function code 6:

FUNCTION	REGISTER	H-BYTE	L-BYTE
RESET-REGISTER	200	H = 51	L = 51 RESET capacitor operation time 16 BIT-Value = 13107
	200	H = 85	L = 85 RESET error-memory 16 BIT-Value = 21845
	200	H = 170	L = 170 RESET max.values 16 BIT- Value = 43690
	200	H = 204	L = 204 RESET switching operations 16 BIT- Value = 52428